

Work Order ID 84531

84531

Page 1

May-15-12 10:42:23 AM

Item ID: D205-634-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Replacement Skidtube
 Start Date: 15/05/2012 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 01/06/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 12/05/15 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2580-041	(DEO) Rev.E

100 0.00
100 DOCUMENT CONTROL
 DC Memo 0.00
 Document Control Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005

N/A *AD*

110 0.00
110 BENDING MACHINE - SKIDTUBES
 CNC Bend 1 Memo 0.00
 CNC Delta 100 Bender 1-Bend as per program D2580.C on CNC Bender and Folio 16
 2-Cut tubes as per Dwg. D2580
 3- scribe batch# in aft end of tube

CF/DC *12-7-19*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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Page 2

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* Skidtubes	Memo 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004	0.00							
130 *130* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00				1	0	12-07-20	

DC 12/07/228

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May-15-12 10:42:23 AM

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Page 3

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Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 15/05/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 01/06/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

140

0.00

140

Skidtubes

Memo

0.00

Skidtubes

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R Aluminum Rod *M122130*

JE 12/07/20

2-Grind welds on step as per Dwg D2580

3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.

4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web. Debur

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

CF 12.7.23

150

QC10- Inspect visual per QSI004- ground welds

0.00

150

QC

Fwd cap only

Memo

0.00

DAS 16 2/15/23

Quality Control

W/O:		WORK ORDER CHANGES					
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Page 4

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160 QC5- Inspect part completeness to step on W/O

0.00

160

QC

Memo

0.00

Quality Control

170 Pressure Wash per QSI005 4.3

0.00

170

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

180 White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

180

Powdercoat

Memo

0.00

Powder Coating

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

8-20
320 °F
8-50

DAS 16 12/07/23

IX ✓

MT 12/07/23

IX ✓

MT 12/07/24

M121841

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 5

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N900040100

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Required Date: 01/06/2012 Req'd Qty: 1.00

*** 1 ***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Operation Description

Set Up/ Run Hours

[illegible]

190

QC3- Inspect Part Finish

0.00

190

QC

Memo

0.00

Quality Control

1 ~~2~~ (2-P) 12/07/30

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Page 6

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200		0.00							
200						1	2	28	12/07/30
HandFinish	Memo	0.00							
Hand Finishing	1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates A/R Sikaflex-291 <u>122130</u> Sikaflex expire date: <u>14/03</u>								
	2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580								
	3-Inspect for foreign object per QSI 024								
	4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 <u>122130</u> Sikaflex expire date: <u>14/03</u>								
	5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: <u>121613</u>								

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84531

Page 7

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1

Cust Item ID:

Required Date: 01/06/2012 Req'd Qty: 1.00


1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210 *210* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024	0.00  0.00		12/12/11					
220 *220* Packaging Packaging Packaging	Packaging Memo Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: <u>PPD 87802</u>	0.00 0.00							
230 *230* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00							

Handwritten notes:
12/18/11
mcs 12/08/03

W/O:		WORK ORDER CHANGES					
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Picklist Print

May-15-12 10:42:27 AM

Page 1

Work Order ID: 84531

84531

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
 KJ IPP Rev P 10.02.19
 per PAR09-043 EC verified by:DD
 IPP Rev. O 06.02.28 Added paperwork EC
 IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
 10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS
 PER ECN11-684 VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4202-1		Manufactured	No			140	Each	161.0000	20	20			
D4202-1									**	1		CF 12.7.23	
Spacer													

Location	Loc Qty	Loc Code
LG	5	
77727	5	
LG002	156	
78806	6	
79810	150	

D2580-1		Manufactured	No			110	Each	4.0000	1	1			
D2580-1									**			CF 12.7.23	
205 Skidtube bent detail													

Location	Loc Qty	Loc Code
LG	4	
76570	2	
77679	2	

D2576-3		Manufactured	No			140	Each	81.0000	1	1			
D2576-3									**			SG 12/07/20	
Step (maching detail)													

Location	Loc Qty	Loc Code
LG	81	
74136	29	
82257	52	

W/O:		WORK ORDER CHANGES					
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Picklist Print

May-15-12 10:42:27 AM

Page 2

Work Order ID: 84531

84531

Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No

200

Each

26.0000

1

1

D2855

Cap

**

1

(2P)

12/07/30

Location

Loc Qty

Loc Code

FP002

94952 ✓

26

65519

2

73347

20

75074

4

AN3-5A Purchased No

200

Each

1,340.000

2

2

AN3-5A

Bolt

**

2

(2P)

12/07/30

Location

Loc Qty

Loc Code

ST350

1340

115371

46

117423

124

118626

41

119355

200

120187 ✓

500

121185

429

AN960JD10L ~~NAS1149D0332J~~ Purchased No

200

Each

0.0000

2

2

***AN960JD10I ***

Washer

**

2

(2P)

12/07/30

12104 ✓

May-15-12 10:42:27 AM

Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
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May-15-12 10:42:27 AM

Page 3

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

2,208.000

50

50

AI S7-1032-130

Insert

**

50

DP

12/07/30

Location

Loc Qty

Loc Code

ST280

122474✓

123

117717

27

118966

22

119775

74

ST282

2085

119530

73

120181

12

121444

2000

AN3C4A

Purchased

No

200

Each

1,969.000

50

50

AN3C4A

BOLT

**

50

DP

12/07/30

Location

Loc Qty

Loc Code

ST350

122416✓

1969

120187

63

120521

28

120769

38

121205

1000

121556

840

AN960C10L

X NAS1149C0332✓
R

Purchased

No

200

Each

0.0000

50

50

*AN960C10I *

washer

**

50

DP

12/07/30

122063✓

May-15-12 10:42:27 AM

Shop Packet Print

Page 3

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May-15-12 10:42:27 AM

Page 4

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200

Each

19.0000

1

1

D3566-13

Gasket

**

1 (SP) 12/07/30

Location

Loc Qty

Loc Code

FP

84880 ✓

12

83351

12

FP002

7

76947

7

D3566-5

Manufactured No

200

Each

25.0000

1

1

D3566-5

Gasket

**

1 (SP) 12/07/30

Location

Loc Qty

Loc Code

FP

84881 ✓

16

82275

16

FP002

9

80374

3

82274

6

D3566-1

Manufactured No

200

Each

39.0000

2

2

D3566-1

Gasket

**

2 (SP) 12/07/30

Location

Loc Qty

Loc Code

FP

84879 ✓

-15

81619

17

FP002

54

68924

2

80919

4

83898

16

May-15-12 10:42:27 AM

Shop Packet Print

Page 4

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Page 5

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Parent Item Name: Replacement Skidtube

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D205-634-041

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-11

Manufactured No

200

Each

12.0000

1

1

D3564-11

Wearshoe

**

1 (SP) 12/07/30

Location

Loc Qty

Loc Code

FG

84871✓
77056

4

4

FP001

80341

8

8

D3564-13

Manufactured No

200

Each

30.0000

1

1

D3564-13

Wearshoe

**

1 (SP) 12/07/30

Location

Loc Qty

Loc Code

FP001

71594

1

1

FP002

80342

82249✓

29

7

22

D3564-9

Manufactured No

200

Each

26.0000

1

1

D3564-9

Wearshoe

**

1 (SP) 12/07/30

Location

Loc Qty

Loc Code

FG

85474✓
76950

4

4

FP001

67590

69943

82255

22

4

1

17

May-15-12 10:42:27 AM

Shop Packet Print

Page 5

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Page 6

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Parent Item Name: Replacement Skidtube

Start Date: 15/05/2012

Required Date: 01/06/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

17.0000

1

1

D3564-5

Wearshoe

**

1

2P

12/07/30

Location

Loc Qty

Loc Code

FG

86234 ✓
34806

2

2

FP001

77609
82254

15

3

12

D2594-3

Manufactured No

200

Each

2,490.000

16

16

D2594-3

O-Ring, 205 Skidtube

**

16

2P

12/07/30

Location

Loc Qty

Loc Code

FP001

8
65518
79496
79573
79755 ✓

2490

41

984

50

1415

D2594-1

Manufactured No

200

Each

383.0000

16

16

D2594-1

Plug, 205 Skidtube

**

16

2P

12/07/30

Location

Loc Qty

Loc Code

FP001

85454 ✓
73401
74442
79495

170

30

18

122

FP-A

213

73401

0

78590

213

May-15-12 10:42:27 AM

Shop Packet Print

Page 6

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

LIST OF MATERIALS					
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960J10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.6) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 24531

12/05/15

DEO ATTACHED

RELEASED
2011-08-29

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	#		
DRAWN	RF		
CHECKED	#		
MFG. APPR.	#		
APPROVED	#		
DE APPR.	#		
DATE	11.06.21		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. REV. E
D2580 SHEET 1 OF 8
TITLE SCALE
205 SKIDTUBE ASSEMBLY NTS

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

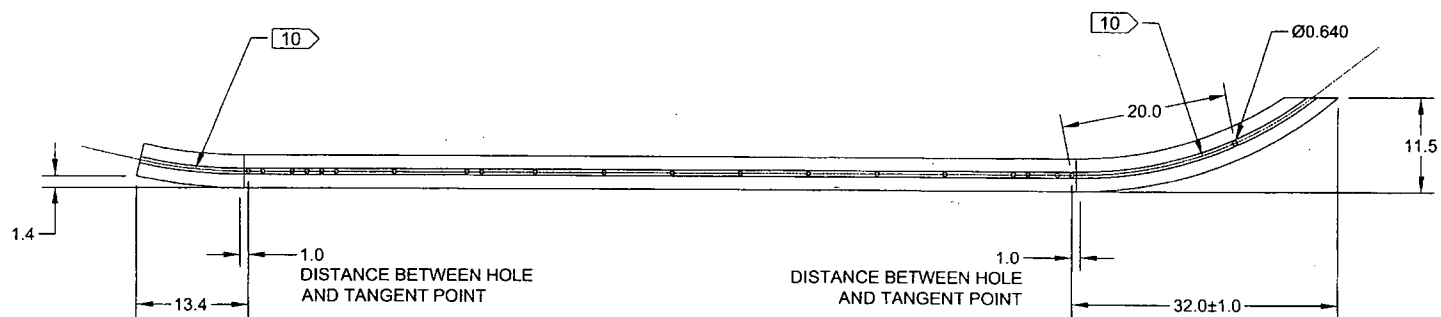
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

24531



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28
JW

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RP	DRAWING NO.	REV. E
MFG. APPR.	DS	D2580	SHEET 3 OF 8
APPROVED	RP	TITLE	SCALE
DE APPR.	RP	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

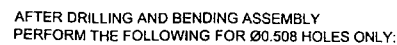
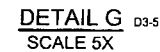
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DEO ATTACHED
RELEASED
2011-08-29
WP



- | | | | |
|-----------|-----------|--|--------------|
| DESIGN | <i>4</i> | DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA | |
| DRAWN | RF | | |
| CHECKED | <i>10</i> | DRAWING NO. | REV. E |
| MFG APPR. | <i>10</i> | D2580 | SHEET 4 OF 8 |
| APPROVED | <i>10</i> | TITLE | SCALE |
| DE APPR. | <i>10</i> | 205 SKIDTUBE ASSEMBLY | NTS |
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

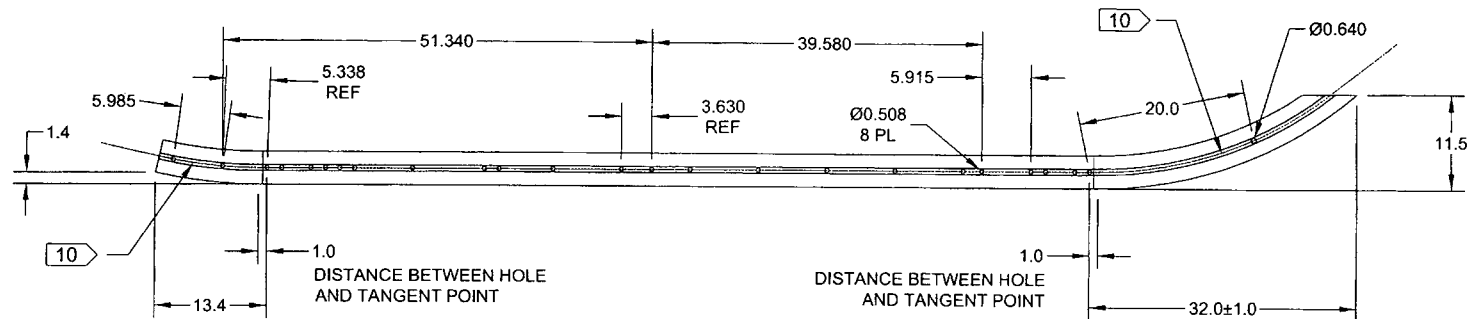
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	SS	D2580	SHEET 5 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

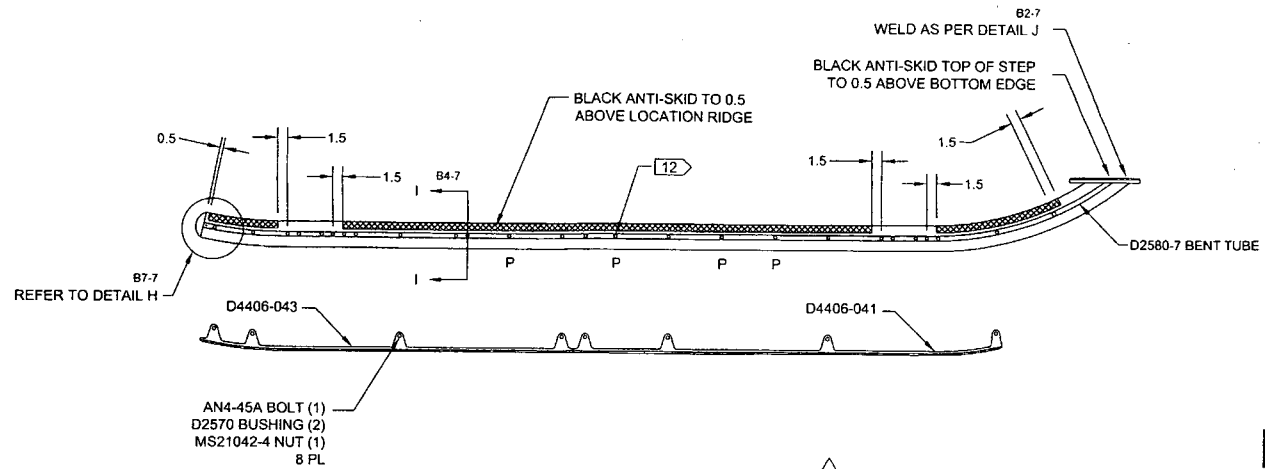
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

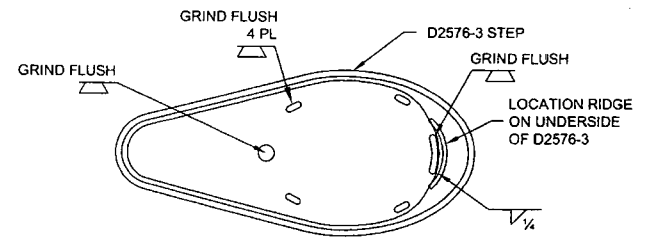
g453.1



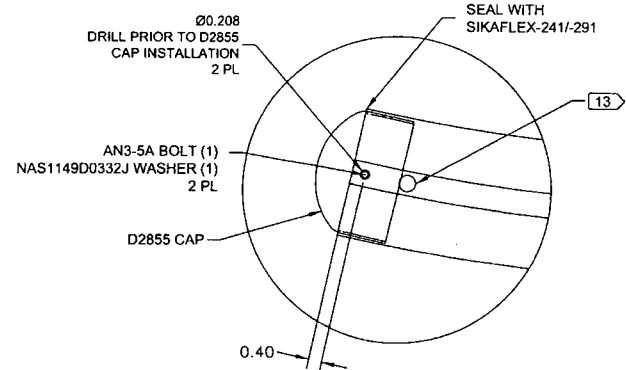
D2580-047 ASSEMBLY DETAIL E

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2011-08-29

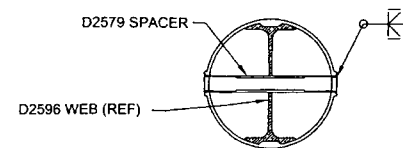
DETAIL J D3-7
SCALE 5X



DETAIL H C6-7
SCALE 5X



SECTION I-I D5-7
SCALE 5X



- AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
 2. INSERT D2579 SPACER (25 PLACES)
 3. WELD INTO PLACE AND GRIND FLUSH
 4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	MP	DRAWING NO.	REV. E
MFG. APPR.	MP	D2580	SHEET 6 OF 8
APPROVED	MP	TITLE	SCALE
DE APPR.	MP	205 SKIDTUBE ASSEMBLY	NTS
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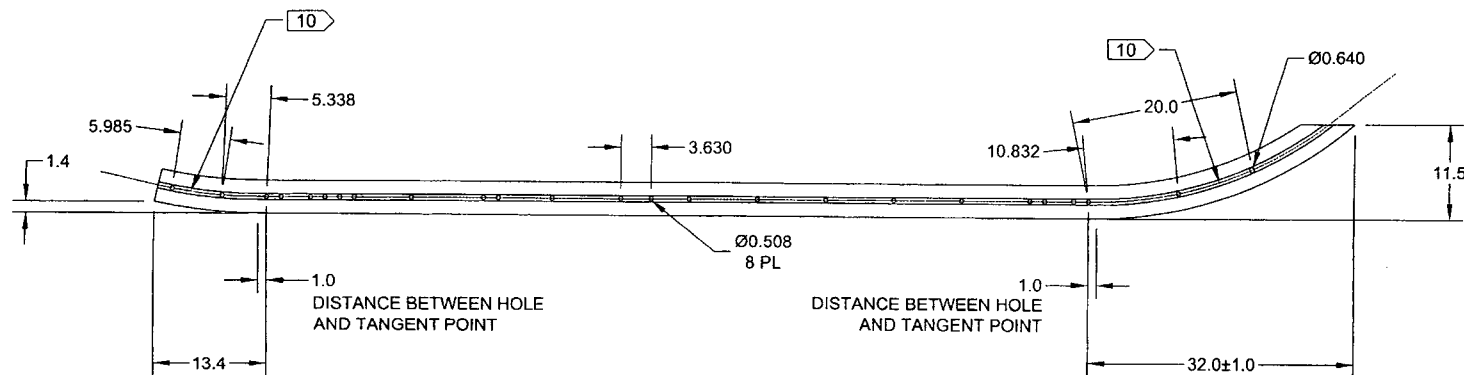
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



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2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RP	DRAWING NO.	REV. E
MFG. APPR.	RP	D2580	SHEET 7 OF 8
APPROVED	RP	TITLE	SCALE
DE APPR.	RP	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

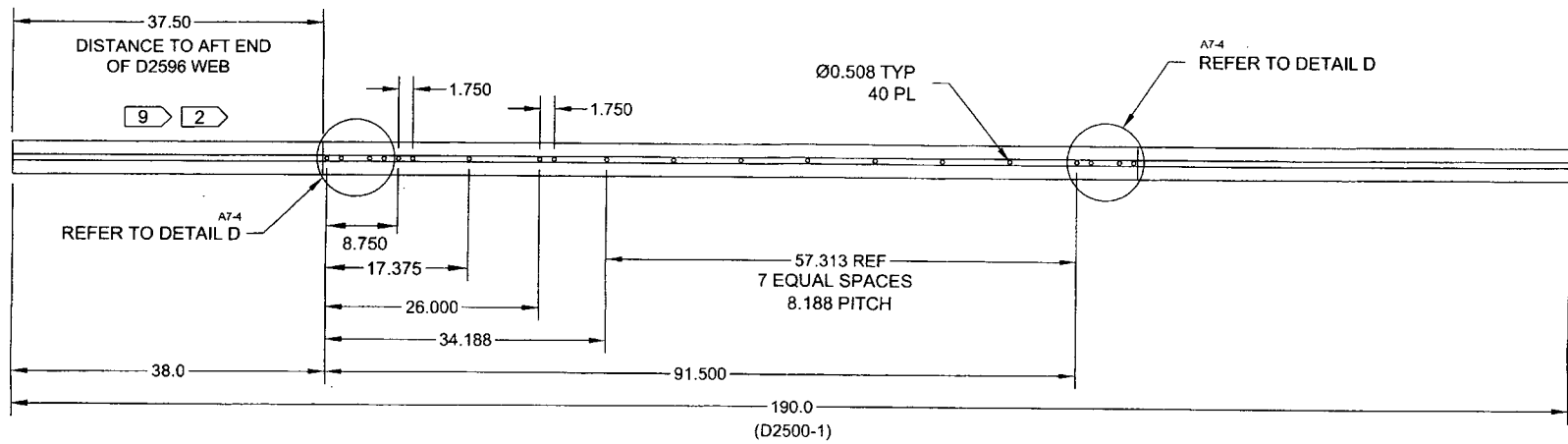
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

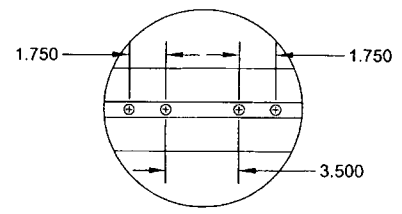
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

04531



D2580-101 TUBE



DETAIL D D3-4
SCALE 5X C7-4

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RELEASED
2011-08-29

DESIGN		DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO. D2580	REV. E SHEET 8 OF 8
MFG. APPR.	10	TITLE	SCALE
APPROVED	10	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>JP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>EC</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

24531

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

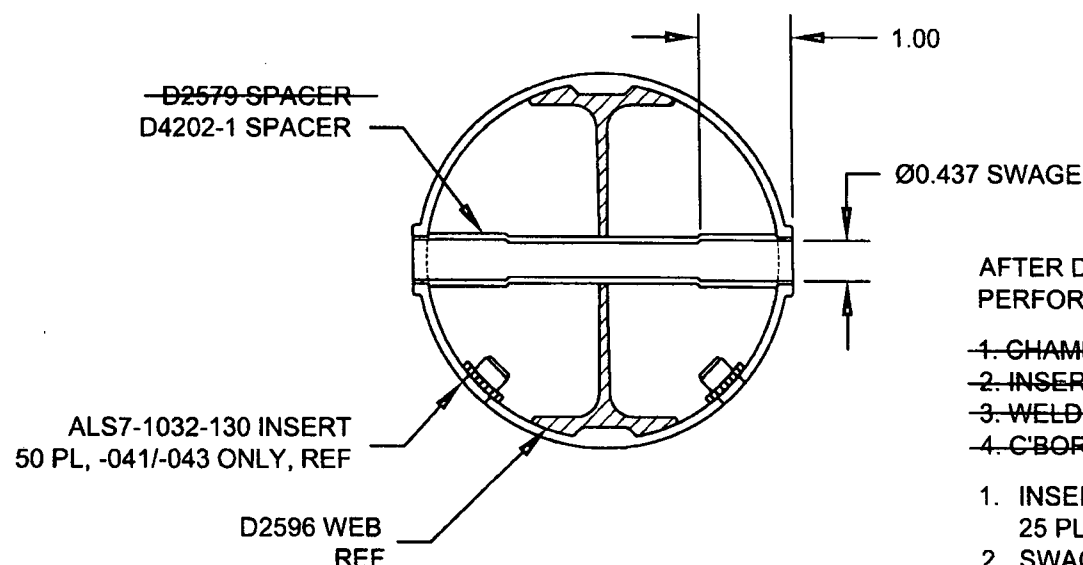
	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

*** FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

RELEASED
2011-12-14 *[Signature]*



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B, F-F, I-I
NOT TO SCALE

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries